

PATENT COOPERATION TREATY

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To:

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NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT
(PCT Rule 71.1)Date of mailing
(day/month/year) 12.04.2001Applicant's or agent's file reference
BB1297 PCT

IMPORTANT NOTIFICATION

International application No.
PCT/US99/28616 International filing date (day/month/year)
03/12/1999 Priority date (day/month/year)
04/12/1998Applicant
E.I. DU PONT DE NEMOURS AND COMPANY et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Emslander, S Tel. +49 89 2399-8718	 
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference BB1297 PCT	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US99/28616	International filing date (day/month/year) 03/12/1999	Priority date (day/month/year) 04/12/1998
International Patent Classification (IPC) or national classification and IPC C12N9/04		
Applicant E.I. DU PONT DE NEMOURS AND COMPANY et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input checked="" type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application 		

Date of submission of the demand 26/06/2000	Date of completion of this report 12.04.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Kurz, B Telephone No. +49 89 2399 7319



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US99/28616

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-29 as originally filed

Claims, No.:

1-24 as originally filed

Drawings, sheets:

1/3-3/3 as originally filed

Sequence listing part of the description, pages:

1-23, as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

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- the description, pages:
 the claims, Nos.:
 the drawings, sheets:
5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):
(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)
6. Additional observations, if necessary:

II. Priority

1. This report has been established as if no priority had been claimed due to the failure to furnish within the prescribed time limit the requested:
 copy of the earlier application whose priority has been claimed.
 translation of the earlier application whose priority has been claimed.
2. This report has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid.

Thus for the purposes of this report, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:
see separate sheet

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims 1-16, 18, 19, 21-24
	No:	Claims 17, 20
Inventive step (IS)	Yes:	Claims -
	No:	Claims 1-24
Industrial applicability (IA)	Yes:	Claims 1-24
	No:	Claims -

2. Citations and explanations
see separate sheet

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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

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Re Item II

Priority

Priority is considered not to be valid for the sequences with the Seq. ID Nos. 15-22 as no such sequences were disclosed in the priority document.

As a consequence thereof, those documents marked as P-documents in the search report are relevant for assessing novelty and inventive step. In the present case, only Seq. ID Nos. 15-20 form part of the claims, whereas Seq. ID Nos. 21 and 22 are not claimed. At present there are no sequence data on file that would allow a final decision on the novelty of Seq. ID Nos. 15-20 in view of the sequences disclosed in the P-documents. It can however be stated that the sequences with the Seq. ID Nos. 15-20 are not inventive in view of the prior art although the objections discussed in Item V, 2. also apply.

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D1: KUZUYAMA T ET AL: 'Fosmidomycin, a Specific Inhibitor of 1-Deoxy-d-Xylulose 5-Phosphate Reductoisomerase in the Nonmevalonate Pathway for Terpenoid Biosynthesis' TETRAHEDRON LETTERS, NL, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, vol. 39, no. 43, 22 October 1998 (1998-10-22), pages 7913-7916, ISSN: 0040-4039
- D2: WO 97 12982 A (CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE) 10 April 1997 (1997-04-10)
- D3: NAHM B. H. ET AL.: 'Large-scale Sequencing Analysis of ESTs from Rice Immature Seed; 97AS2386 Rice Immature Seed Lambda ZAPII cDNA Library Oryza sativa cDNA clone 97AS2386; mRNA sequence' EMBL DATABASE ENTRY AA753357; ACCESSION NO. AA753357,21 January 1998 (1998-01-21)

1. Novelty (Article 33(2) PCT):

- 1.1 Document D1 discloses a method for evaluating a compound for its ability to inhibit an isopentenyl diphosphate biosynthetic enzyme comprising all method steps of claim 17. As a consequence thereof claim 17 is not novel with respect to D1.
Furthermore, with respect to all other claims, claim 17 relates to the solution of a different technical problem. Consequently no common concept linking claim 17 with all other claims can be identified and the application thus lacks unity. The applicant at present is not asked to pay additional fees.
- 1.2 In view of documents D2 and D3 claim 20 is considered not to be novel. Both documents disclose sequences of 30 or more nucleotides identical to those of claim 20. In detail, Seq. ID No. 1 of D2 and the sequence of D3 are in part identical to Seq. ID No. 5 of the present application.

2. Inventive step (Article 33(3) PCT):

The sequences claimed show similarity to bacterial sequences coding for 1-deoxy-D-xylulose 5-phosphate reductoisomerase. The similarity was identified by sequence comparisons. However, a sequence similarity of polynucleotides/polypeptides isolated from different organisms does not necessarily mean that the respective proteins carry out identical functions. As no experiments concerning the function of the putative sequences have been carried out (Examples 4 to 7 are of hypothetical nature), any proposal of a possible function has to be considered as purely speculative.

In the absence of any function of the protein, there is no basis for any problem to be solved. Consequently, no inventive activity can be acknowledged for the "discovery" of a further protein/further proteins, since no meaningful contribution over the art is recognisable.

Claims 1-24 of the present application thus are considered not to be inventive according to Article 33(3) PCT.

Re Item VII

Certain defects in the international application

The numbering of the claims is incorrect. Claim 9 is missing.

Re Item VIII

Certain observations on the international application

1. Claim 1 is unclear (Article 6 PCT) as no function of the claimed nucleotide is given. A function is only given for the nucleotide to which the claimed sequence must be 93% identical. Furthermore, the subparts of the sequences as defined in the method claims or the dependent claim 20 do not have a function at all. It is in doubt whether a sequence of 30 nucleotides is indeed representative for the claimed sequences with the Seq ID Nos. 1, 3, 5,...,19.

- 1.1 Claim 1 is unclear in itself (Article 6 PCT) as Seq. ID Nos. 2, 12, and 14 represent polypeptides with less than 200 amino acids. However, claim 1 relates to polypeptides of at least 200 amino acids that are at least 93% identical to Seq. ID Nos. 2, 4, 6,..., 20. In case of Seq. ID. No. 2 only one third of the claimed sequence would be defined, whereas two thirds remain completely undefined. Sequences of this kind are unclear and not supported by the description (Article 6 PCT).

2. Step (a) of claim 12 is unclear (Article 6 PCT) as the term "derived from" encompasses sequences which are not identical to the sequences of Seq. ID Nos. 1, 3, 5,...,19. It is not clear in what way the derived sequences may differ from the original sequence.

3. Claims 18 and 19 seem to be redundant as they both refer back to the isolated polynucleotide of claim 1.

4. Claims 23 and 24 are unclear (Article 6 PCT). Both claims refer to claim 22 with the wording "...wherein the plant cell". However, claim 22 does not specify any plant cells but contains the general term "cells". The cells of claim 22 can therefore be all kinds of cells, e.g. bacterial cells.

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5. General statements in the description which imply that the extent of protection may be expanded in some vague and not precisely defined way, such as the "spirit" of an invention (page 18, line 31 of the description) are objected to (Article 6 PCT and PCT Gazette Section IV, III-4.3a).